North Dakota State Implementation Plan
for
Regional Haze
Amendment No. 1

A Plan for Implementing the Regional Haze Program Requirements of Section 308 of 40 CFR Part 51, Subpart P - Protection of Visibility

North Dakota Department of Health
Adopted:_____

Division of Air Quality
Air Pollution Control Program
North Dakota Department of Health
918 East Divide Avenue
Bismarck, North Dakota 58501-1947
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Terry Dwelle, M.D., M.P.H.T.M.
State Health Officer

Terry O'Clair, P.E.
Director

APPROVAL PAGE

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North Dakota Department of Health, Environmental Health Section, Division of Air Quality.

Approval by the following North Dakota Department of Health Management Personnel:

_____ _____

Terry L. O'Clair, P.E., Director — Date
Division of Air Quality

_____ _____

L. David Glatt, P.E., Chief — Date
Environmental Health Section

Adopted for the North Dakota Department of Health

_____ _____

Terry L. Dwelle, M.D., M.P.H.T.M. — Date
State Health Officer
North Dakota Department of Health

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to

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January 2011

North Dakota Department of Health
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Table of Contents

I. Summary of Additions/Changes

A. Coyote Station

In Section 10.6.1.2 of the original Regional Haze SIP, the NDDH had required the owners/operators of the Coyote Station to reduce nitrogen oxides emissions to 0.50 lb/10^6 (12-month rolling average). Compliance with the limit was to be achieved by July 1, 2019. This amendment revises the emission limit to 0.50 lb/10^6 Btu (30-day rolling average) and requires compliance by July 1, 2018. Section 10.6.1.2 and the Permit to Construct in Appendix A which establishes the limit, have been revised accordingly.

B. M.R. Young Station

This amendment adds additional information to Appendix C.4 of the SIP. The information was obtained and produced as part of Best Available Control Technology (BACT) determination for nitrogen oxides at the M.R. Young Station after the Best Available Retrofit Technology (BART) determination was made and submitted to EPA.

II. SIP Revisions and Changes

10.6.1.2 Coyote Station

Once reductions are achieved from the BART sources, the Coyote Station will be the largest point source of NO_x emissions in North Dakota. The analysis in Section 9.5.1 indicates that additional controls on the Coyote Station are not reasonable at this time; however, the State, through recent discussions with OtterTail Power Company, has reached an agreement whereby OtterTail has committed to reduce NO_x emissions at the station. OtterTail Power Company has indicated they will install equipment by July 1, 2018 in order to reduce NO_x emissions to 0.50 lb/10^6 Btu on a 30-day rolling average basis. This represents a 35% decrease from the 2008 annual average emission rate of 0.77 lb/10^6 Btu and 26% from the baseline emission rate evaluated in Section 9.5.1. The reductions are expected to be achieved by installing separated over fire air. This will reduce annual NO_x emissions by 4,213 tons from the 2000-2004 baseline, a 32% decrease. The Permit to Construct establishes July 1, 2018 as the date compliance must be achieved. The mechanism/requirement for reducing NO_x emissions is included in a Permit to Construct found in Appendix A. Although there will be NO_x reductions at this facility, it will be reevaluated during future planning periods to determine if additional emissions reductions are required.

Appendix C.4
Minnkota Power Cooperative
Milton R. Young Station Units 1 and 2

The following documents are added to Appendix C.4:

1. Minnkota Power Cooperative and Square Butte Electric Cooperative; Responses to Comments to NDDH Regarding Revised Draft NO_x BACT Determination and North Dakota State Implementation Plan for Regional Haze: Milton R. Young Station Unit 1 and Unit 2; July 30, 2010.

2. NDDH; Findings of Fact for Best Available Control Technology Determination for Control of Nitrogen Oxides for M.R. Young Station Units 1 and 2; November 2010.

3. NDDH; Response to Public Comments on Best Available Control Technology Determination for Control of Nitrogen Oxides for M.R. Young Station Units 1 and 2.

4. Minnkota Power Cooperative and Square Butte Electric Cooperative; Responses to NDDH Request, NO_x BACT Analysis Study, Milton R. Young Station Unit 1 and Unit 2 Regarding SCR Economic Feasibility; December 11, 2009.

5. Burns and McDonnell; Vendor Guarantee Information from Haldor Topsoe, Inc. and CERAM Environmental, Inc.; January 2010.

6. Excerpts from SCR Proposal for M.R. Young Station by Haldor Topsoe, Inc. and CERAM Environmental, Inc.

7. Minnkota Power Cooperative and Square Butte Electric Cooperative; Followup Responses to Presentation and NDDH Request for Additional Information Supplemental NO_x BACT Analysis Study – Milton R. Young Station Unit 1 and 2 Regarding SCR Economic Feasibility; February 11, 2010.

8. U.S. EPA; Comments on the North Dakota Department of Health's April 2010 Draft BACT Determination for NO_x for the Milton R. Young Station; May 10, 2010 w/enclosures.

9. National Parks Conservation Association; Comments on the April 2010 Preliminary Best Available Control Technology Determination for Control of Nitrogen Oxides for M.R. Young Station Units 1 and 2; May 10, 2010.

10. National Park Service; Comments on NDDH Best Available Control Technology Determination for Control of Nitrogen Oxides for M.R. Young Station Units 1 and 2; May 10, 2010.

11. Basin Electric Power Cooperative; Comments on NDDH April 2010 BACT Determination; May 7, 2010.

12. OtterTail Power Company; Comments on Notice of Intent to Issue a BACT Determination Pursuant to Consent Decree, M.R. Young Station; April 29, 2010.

AIR POLLUTION CONTROL
AMENDED PERMIT TO CONSTRUCT
REVISION NO. 1

Pursuant to Chapter 23-25 of the North Dakota Century Code, and the Air Pollution Control Rules of the State of North Dakota (Article 33-15 of the North Dakota Administrative Code), a Permit to Construct is hereby issued for modifications at the following source:

I. **General Information**:

A. **Permit to Construct Number**: PTC10008

B. **Source**:

1. **Name**: Coyote Station
2. **Location**: Sec. 10, S½ of S ½ of Sec. 3 and W½ of Sec. 11, T143N, R88W, North Dakota, Mercer County
3. **Source Type**: Fossil-fuel fired steam electric unit with a nominal heat input of 5,800 million British thermal units per hour (10^6 Btu/hr).

C. **Owner Names**: Montana-Dakota Utilities Co.
NorthWestern Energy
Northern Municipal Power Agency
(Minnkota Power Cooperative, Inc.)
Otter Tail Power Company

D. **Operator**:

1. **Name**: OtterTail Power Company
2. **Address**: 215 South Cascade Street
P.O. Box 496
Fergus Falls, MN 56538-0496

II. Permit Conditions:

This Permit to Construct establishes a revised nitrogen oxide (NO_x) emission limit for the main boiler at the Coyote Station (EUI 1) if, and when, EPA approves that limit as part of the Regional Haze SIP. The permit allows the construction and initial operation of new or modified air pollution control equipment and process modifications at the source to comply with the revised NO_x limit. If new emissions units are created, then a new Permit to Construct may be required in accordance with NDAC 33-15-14-02. The source shall be operated in accordance with the terms of this Permit to Construct and the Title V Permit to Operate until a revised Title V Permit to Operate is issued. The source is subject to all applicable rules, regulations, and orders now or hereafter in effect to the North Dakota Department of Health and to the conditions specified below:

A. Special Conditions:

1. **Emission Limits**: The permittee shall not discharge or cause the discharge of nitrogen oxides (NO_x) into the atmosphere from EUI 1 in excess of 0.50 pounds per million British thermal units ($lb/10^6$ Btu) of heat input, on a 30-day rolling average basis.

   The term "30-day rolling average," as used in this permit, shall be determined by calculating an arithmetic average of all hourly rates for the current boiler operating day and the previous 29 boiler operating days. A new 30-day rolling average shall be calculated for each boiler operating day. Each 30-day rolling average rate shall include start-up, shutdown, emergency and malfunction periods. The 30-day rolling average emission rate is calculated as follows:

   - Calculate the hourly average emission rate for any hour in which any fuel is combusted in the boiler.

   - Calculate the 30-day rolling average emission rate as the arithmetic average of all valid hourly average emission rates for the 30 successive boiler operating days.

   The term "boiler operating day," as used in this permit, means any 24-hour period between midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit.

2. **Compliance Date**: Compliance with the revised NO_x emission limit shall begin by July 1, 2018.

3. **Continuous Emission Monitoring (CEM)**: The emissions from EUI 1 shall be measured by continuous emission monitors (CEM) for NO_x and CO_2, The monitoring requirements under Condition II.A.4 shall be the compliance determination method for NO_x.

4. **Monitoring Requirements and Conditions**:

a. Requirements:

Testing and monitoring protocols used to demonstrate compliance with the emission limits of Condition II.A.1 above shall be as follows:

Table 1
Monitoring Requirements by Pollutant/Parameter

Pollutant/Parameter	Monitoring Requirement (Method)	Condition Number (II.A. …)
NO_x (lb/10^6 Btu)	CEM	4.b.(1), 4.b.(2), 4.b.(3) & 4.b.(4)
CO_2	CEM	4.b(1), 4.b.(2), 4.b.(3) & 4.b.(4)

b. Emission Monitoring Conditions:

(1) The monitoring shall be in accordance with the applicable requirements of the Acid Rain Program, 40 CFR 72 and 40 CFR 75. Emissions are calculated using 40 CFR Part 75.

(2) The Department may require additional performance audits of the CEM systems.

(3) When a failure of a continuous emission monitoring system occurs, an alternative method, acceptable to the Department, for measuring or estimating emissions must be undertaken as soon as possible. The procedures outlined in 40 CFR 75, Subpart D for substitution are considered an acceptable method for the emission rate. Timely repair of the emission monitoring system must be made.

(4) The permittee shall maintain and operate air pollution control monitoring equipment in a manner consistent with the manufacturer's recommended procedures or a site-specific QA/QC Plan required by 40 CFR 75. The permittee shall have the QA/QC Plan available on-site and provide the Department with a copy when requested.

5. **Recordkeeping Requirements**: The permittee shall maintain compliance monitoring records for Unit 1 as outlined in Table 2 – Monitoring Records that includes the following information:

a. A copy of the sample analysis report(s), including the date that the sample analysis was performed; the company, entity, or person that performed the analysis; and the testing techniques or methods used.

b. The records of quality assurance for emissions measuring systems including but not limited to quality control activities, audits and calibration drifts as required by the applicable test method.

c. A copy of all field data sheets from the emissions testing.

d. A record shall be kept of all major maintenance activities conducted on the emissions units or air pollution control equipment.

Table 2
Monitoring Records

Pollutant/Parameter	**Compliance Monitoring Record**
NO_x (lb/10^6 Btu)	CEM Data
CO_2	CEM Data

e. In addition to requirements outlined in Condition II.A.5, recordkeeping for EUI 1 shall be in accordance with the applicable requirements of the North Dakota Air Pollution Control Rules and the Acid Rain Program, 40 CFR 72 and 40 CFR 75.

f. The permittee shall retain records of all required compliance monitoring data and support information for a period of at least five years from the date of the compliance monitoring sampling, measurement, report, or application. Support information includes all maintenance records of the emission units and all original strip-chart recordings/computer printouts and calibrations of the continuous compliance monitoring instrumentation, and copies of all reports required by the permit.

6. **Reporting**:

a. Reporting for EUI 1 shall be in accordance with the applicable requirements of the North Dakota Air Pollution Control Rules and the Acid Rain Program, 40 CFR 72 and 40 CFR 75.

b. Quarterly excess emissions reports for EUI 1 shall be submitted no later than the 30th day of the following the end of each calendar quarter. Excess emissions are defined as emissions which exceed the emission limit for EUI 1 as outlined in Condition II.A.1.a. Excess emissions shall be reported for the following:

Parameter	Reporting Period
NO_x lb/10^6 Btu	30-day rolling average

c. The permittee shall submit a semi-annual report for all monitoring records required under Condition II.A.5 on forms supplied or approved by the Department. All instances of deviations from the permit must be identified in the report. A monitoring report shall be submitted within 45 days after June 30 and December 31 of each year.

d. 1) The permittee shall submit an annual compliance certification report within 45 days after December 31 of each year on forms supplied or approved by the Department.

2) For emissions units where the method of compliance monitoring is demonstrated by either an EPA Test Method or portable analyzer, the test report shall be submitted to the Department within 60 days after completion of the test.

3) The permittee shall submit an annual emission inventory report on forms supplied or approved by the Department . This report shall be submitted by March 15 of each year. Insignificant units/activities listed in this permit do not need to be included in the report.

4) The permittee shall notify the Department within 15 days of the actual startup date of the equipment required to meet the NO_x permit limit.

B. **General Conditions**:

1. The permit shall in no way permit or authorize the maintenance of a public nuisance or danger to public health or safety.

2. The permittee shall comply with all State and Federal environmental laws and rules. In addition, the permittee shall comply with all local building, fire, zoning, and other applicable ordinances, codes, rules and regulations.

3. All reasonable precautions shall be taken by the permittee to prevent and/or minimize fugitive emissions during the construction period.

4. The permittee shall at all times, including periods of startup, shutdown, malfunction, maintain and operate EUI 1 and all other emission units

including associated air pollution equipment and fugitive dust suppression operations in a manner consistent with good air pollution control practices for minimizing emissions.

5. Any duly authorized officer, employee or agent of the North Dakota Department of Health may enter and inspect any property, premise or place at which the source listed in Item I.B. of this permit is or will be located at any time for the purpose of ascertaining the state of compliance with the North Dakota Air Pollution Control Rules and the conditions of this permit.

6. The conditions of this permit herein become, upon the effective date of this permit, enforceable by the Department pursuant to any remedies it now has or may in the future have, under the North Dakota Air Pollution Control Law, NDCC Chapter 23-25. Each and every condition of this permit is a material part thereof, and is not severable.

FOR THE NORTH DAKOTA
DEPARTMENT OF HEALTH

Date:_____ By:_____

Terry L. O'Clair, P.E.
Director
Division of Air Quality